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ABSTRACT

The total quality movement began as a result of the desire of W. Edwards Deming, an American statistician, to permit the economic system to maintain its edge in a growing global market. The 14 points Deming listed as essential to "total quality management" have recently been adapted to the field of education. The success of the total quality movement in education begins with its relationship to key players affecting the educational system. The quality movement concentrates its efforts and energies on school governance, curriculum design, instructional practices, and student outcomes. Educational organizations throughout the country are recreating their work processes, systems of human interaction, mission statements, and their long-term visions and strategies. The Erie (Pennsylvania) Excellence Council is an example of the application of the concepts of Total Quality Management in an established quality region of 17 school districts. Another example is seen in the Center for Total Quality Schools at Pennsylvania State University, the first university-based project designed to provide teachers and administrators with the training, support, and research base needed to implement Total Quality Management. The impact of the quality movement as a driving force in school reform will be negated unless school governance, curriculum design, and instructional processes are redesigned and student outcomes are emphasized. (Contains one figure.) (SLD)

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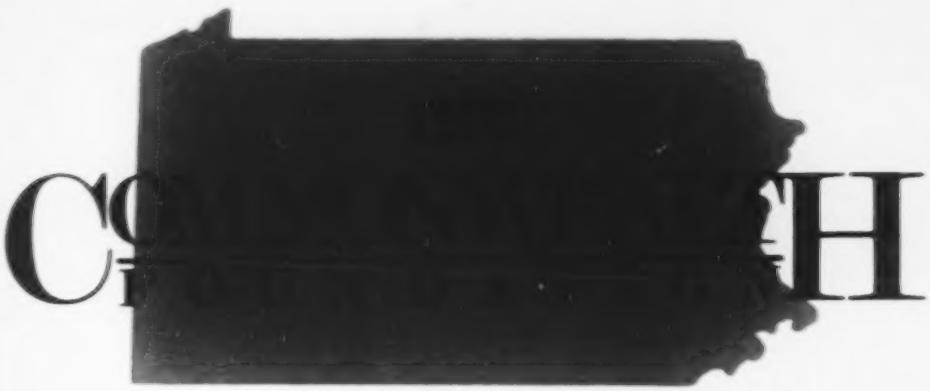

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THE TOTAL QUALITY MOVEMENT IN EDUCATION

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INTRODUCTION

Over the past decade, Americans have become painfully aware of the challenges we face as a nation in a fiercely competitive global marketplace. There was a time not so long ago, that the label "Made in the USA" was an international symbol of quality. That is no longer the case. Rather, our trade deficit serves as an almost constant reminder that many of our goods and services are no longer as competitive as they once were in the international arena. We now stand toe-to-toe with nations whose workforces and work processes are simply better than our own.

HISTORICAL PERSPECTIVE

The total quality movement began as a result of a visionary's dream to permit the American economic system to maintain its edge in what he perceived as a growing global market. This man was W. Edwards Deming, an American statistician who trained under Walter Schuhart, an American economist selected by President Roosevelt to head the Office of War Time Quality Control. Unfortunately, the reality is that no one in the American business community heeded Deming's warnings or responded to his teachings.

Directly following World War II, Deming was called to Japan to conduct a post-war census for the Imperial Japanese Government. It was during this period that Deming introduced his theories of "Total Quality Management" to the Japanese industrial leadership. He envisioned that the key to the success of any organization rests with the optimization of its systems. System optimization assures that everyone within the organization gains. The success of any organization depends totally upon its ability to know and fulfill the needs and expectations of its customers; a customer being defined in its external and internal context.

In Deming's view, top management is responsible for the success or failure of any organization. Contrary to traditional thinking, Deming's view perceives that the worker has little control over the destiny of an organization. In fact, the great majority of workers want to succeed at what they do, and it is the inefficiency of an organizational structure that frequently prevents success from occurring. If workers in a organization are permitted to have a say in their destiny, the organization has a greater opportunity for success.

If total involvement is an indicator of quality, it becomes incumbent upon the structure of the organization to allow for staff participation in the decision-making process. This concept allows the complete staff to have a say in the shaping of their destiny. This view corresponds to Deming's belief that intrinsic motivation is a key stimulator and that extrinsic motivators, while important, have less impact upon the efficiency and productivity of the worker.

There is widespread agreement that the essential components of "the quality strategy" are best illustrated through the statement: *...listen to your customers; develop products and services that are better than your customers expect them to be; and, continuously improve organizational processes that lead to customer satisfaction.*

DEMING'S FOURTEEN POINTS

W. Edwards Deming illustrated his beliefs related to Total Quality Management through the

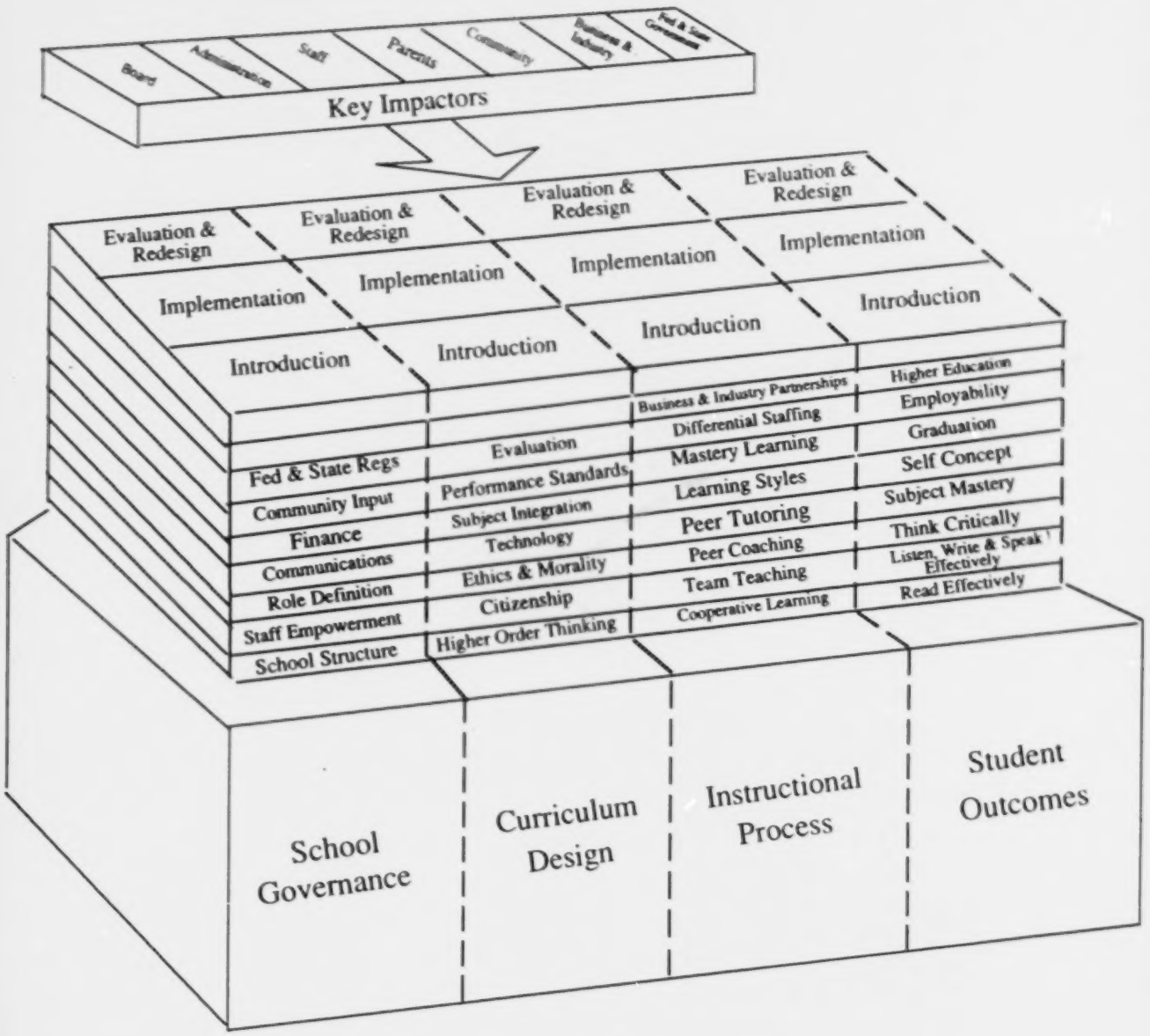
publication of his now famous Fourteen Points or Principles. The fourteen points deal with specific behaviors and environments that must be present for a quality organization to succeed.

These points are listed below:

1) Create a constancy of purpose toward the improvement of products and services.
2) Adopt a new leadership philosophy for the new economic age.
3) Cease dependence on mass inspection to achieve quality by building quality into the product or service in the first place.
4) End the practice of awarding business on price tag alone. Instead, minimize total cost, often by developing a long-term relationship with a single supplier.
5) Improve constantly the system of production or service to improve quality and reduce costs.
6) Institute training on the job.
7) Institute leadership to help people to do a better job.
8) Drive out fear so that everyone can work more effectively.
9) Break down barriers between departments.
10) Eliminate slogans, exhortations, and targets for the employees.
11) Eliminate quotas and management by objective.
12) Remove barriers that rob all employees of their right to pride in workmanship.
13) Institute a vigorous program of education and self-improvement.
14) Put everyone in the organization to work to accomplish the transformation. Transformation is everybody's job.

Deming's fourteen points have recently been adapted to the field of education. It is true that one may question the relationship between Deming's industrial model and its adaptability as a tool for educational reform. When studied in depth, however, the total quality model has major implications and profound possibilities. For the first time in the search for educational reform and innovation, the quality movement has brought forth a plan that is all inclusive.

In order to demonstrate the impact of total quality upon the complete educational system, we have opted to utilize the following graphic for illustrative purposes.


Board
Administration
Staff
Parents
Community
Business & Industry
Fed & State Governments
Key Impactors
Evaluation & Redesign
Implementation
Introduction
Fed & State Regs
Community Input
Finance
Communications
Role Definition
Staff Empowerment
School Structure
Evaluation
Performance Standards
Subject Integration
Technology
Ethics & Morality
Citizenship
Higher Order Thinking
Business & Industry Partnerships
Differential Staffing
Mastery Learning
Learning Styles
Peer Tutoring
Peer Coaching
Team Teaching
Cooperative Learning
Higher Education
Employability
Graduation
Self Concept
Subject Mastery
Think Critically
Listen, Write & Speak Effectively
Read Effectively
School Governance
Curriculum Design
Instructional Process
Student Outcomes

As the graphic illustrates, the success of the quality movement begins with its relationship to the key players affecting the system. This includes the school board, administration, staff, parents, community, business and industry as well as federal, state, and local governments. Each must understand the philosophy and beliefs which drive the quality program as well as the methodologies and tools which allow quality to evolve. Without this basic commitment and understanding on the part of the key players, the quality movement, like so many of the other well-intentioned reform movements, will fail.

If you look at past education reform efforts, most have concentrated on one or, at the most, two of the "educational impactors." The quality movement concentrates its efforts and energies upon all of these impactors: school governance, curriculum design, instructional practices, and student outcomes or expectations. Deming's philosophy of management, his desire to systemize the process, his belief in the involvement of the participant, his desire to work in cooperative groups, and his insistence on satisfying the customer all take on new connotations for educators.

Dr. Deming is uncompromising in his assertion that it is time for bold leadership and systematic change. It is his belief that "Transformation" is required in government and industry as well as education. Management is presently in a stable state. Transformation will be required to move management from this state of stability to one representing a new metamorphism. This transformation process cannot represent a mere patchwork on the present system of management, but must encompass a complete change of state. While we must continue to solve problems and stamp out fires as they occur, such activities do not change the system.

TOTAL QUALITY MANAGEMENT EXAMPLES IN OTHER STATES

Educational organizations throughout the United States are re-creating their work processes, systems of human interaction, mission statements, and their long-term vision and strategies. For example, in Glenwood, Maryland, the middle school has instituted New England-style town meetings for the student body. Before attending the meeting, every student works in one or more quality circle "S-Teams" with fellow students. S-Team (or Support Team) is a play on the word "esteem." In the teams students discuss how their work, individually and collectively, can be improved. They pledge specific efforts to help bring about the planned results in their "house" or grade, or even the entire school.

S-Team projects take the students into the community as well, for public service and town improvement efforts at nursing homes and hospitals, at home to improve family life, and at school for campus beautification.

Schools in Virginia's Rappahannock County have implemented TQM in virtually every aspect of the district's functioning. Reports cards have been designed by a parent-teacher-student team. Serious disciplinary problems on bus runs have been solved as a result of the efforts of a Quality Improvement Committee, composed of administrators, bus drivers, parents, students, and the transportation supervisor. In addition, results of district-wide customer satisfaction surveys have shown remarkable gains in the three years since the district began implementing Total Quality principles and practices.

Redwood Middle School in Napa, California, is solving its new problems generated by a growing population, such as impersonalization by creating cohort groups of teachers and students. Teachers are given time every day to meet with their student groups, to discuss the progress of students, to monitor their individual and collective learning processes, and to plan additional learning opportunities for the students. Learning at Redwood is a team project.

TWO EXPERIMENTS RELATED TO QUALITY REFORM IN PENNSYLVANIA

The Erie Experience

In July of 1987, the Erie Excellence Council was founded to bring the concept of Total Quality Management to the Greater Erie Region. As a result of this decision, Erie, Pennsylvania become the model for other Pennsylvania communities to emulate. Erie area businesses, governmental entities, and educational institutions designated the 1990s as the "Decade for Excellence." The groundwork was laid for what was expected to lead the greater Erie community toward a higher quality of life. In essence, the movement represented a total community revolution.

Over 20 committees representing every phase of community life were established to work toward quality achievement. One of the most active committees has been the Excellence Council on Quality Education. The committee was given the assignment of developing a written plan to be entitled "Vision for Education," with implementation by the year 1999.

Five major goals were established to guide the committee forward in its mission. The first goal establishes that by 1999, the schools within the Erie Quality Region will be recognized as national leaders in the teaching and practice of quality. Goal two states that each institution will have developed and implemented a continuous quality improvement program at all organization levels. Goal three provides that small project teams will be utilized in the schools to address specific opportunities for improvement with emphasis on process improvement rather than problem-solving. Goal four states that schools will develop a system for quality assurance. Staff members will be trained in basic team dynamics, data utilization, and team processes. Goal five specified that all students graduating from area high schools will be knowledgeable about and be able to demonstrate application of continuous quality improvement concepts.

The Erie educational community has accepted the quality challenge with unprecedented enthusiasm. All of the 17 school districts within the Northwest Tri-County Intermediate Unit have agreed to participate in this experiment in quality. A number of projects are already off the ground and more are being planned for the future.

The educational quality movement for all 17 districts was officially launched in 1992 as a part of the celebration of the North Coast Quality Week sponsored by the Erie Chamber of Commerce and supported through the cooperation of business, education, and government.

Over 1,200 educators representing the 17 school districts within Pennsylvania's Intermediate Unit 5 assembled to celebrate the Greater Erie Area's move toward quality. The program consisted of a keynote presentation in the morning session and over 50 program selections during

the afternoon. The evaluations which were returned at the conclusion of the day indicated that the program was a huge success.

As an added incentive, such eminent personalities in the quality movement as Joel Barker, Stephen Covey, W. Edwards Deming, and Myron Tribus made major presentations.

Participation of the school districts in the quality movement continues with frequent updates on the progress of the Educational Excellence Committee and the development of its "Vision" document. Technical seminars also continue to be held to train school administrators in the use of quality tools.

Several districts now have trained teams in "Total Quality Teaching" (TQT) and will use these internal teams to train other personnel. In practice, many of the school districts have developed their training to the extent that the entire staff is heavily involved in the process. The remaining are continuing to explore the concept of quality, but have as yet to begin implementation at the building level.

The Center For Total Quality Schools

The Center for Total Quality Schools (CTQS) at Penn State University is the first university-based project devoted exclusively to providing K-12 teachers and administrators with the training, support, and research base needed to implement Total Quality Management principles and practices in the public schools of Pennsylvania. Housed in the Department of Educational Administration in Penn State's College of Education, the CTQS is well positioned to serve the training requirements of practitioners throughout the Commonwealth.

The CTQS evolved over a very short period of time during the 1991-92 academic year due to confluence of seven key factors:

A strong community quality council. TQM envisions systemic change in organizations. School districts are arguably among the purest practitioners of the traditional or "Taylorist" management style, which emphasizes striving for higher levels of efficiency through strong managerial direction. School administrators who aspire to fostering systemic change can expect to encounter resistance and must have allies in the community who understand and support the change to TQM. Therefore, linkages with progressive business leaders can provide the foundation for developing community support for the successful implementation of TQM in the public schools.

Founded in 1990 in State College, the Total Quality Council of Central Pennsylvania has had a significant impact on the development of a community-wide understanding of, and appreciation for, the importance of TQM in all kinds of organizations.

Active participation. Both Penn State and the State College Area School District were founding members of the Total Quality Council of Central Pennsylvania. From the outset, representatives of both organizations shared in the efforts to develop the fledgling quality council. And, teams of employees from both organizations participated in comprehensive training

programs offered by the Quality Council. Thus, educators from basic and higher education found themselves learning about TQM side-by-side with their counterparts from the private for-profit and non-profit sectors.

It became clear early in the development of CTQS that the business community views the educational community primarily as a "supplier" of human resources for their organizations. Hence, these businessmen do recognize the importance of ensuring that graduates enter the workforce already aware of the vital importance of quality issues. These linkages were vital in promoting the CTQS when funding was needed to "jump-start" initial activities in the development phases.

Strong commitment. An absolutely vital ingredient in TQM is leadership from top management. At Penn State, the university provost assumed leadership of the university-wide TQM effort. His previous experience with TQM while serving as Dean of the College of Engineering has allowed him to move ahead decisively. The superintendent of schools for the State College Area School District was part of the initial school district team to be trained in TQM. He continues to play a leadership role in bringing the principles and practices of continuous quality improvement into the school district through direct training of employees. Also, two members of the State College Area District School Board received training in TQM through their role as employees of Penn State University.

Innovative in-house training programs. During the 1991-92 school year, the State College Area School District developed a prototype monthly training program for 85 first-line supervisors. The training group included: all members of the administrative team; subject area coordinators, most of whom are also part-time classroom teachers; physical plant supervisors; and cafeteria managers. In addition, the nine members of the school board were invited to attend and did so as their schedules permitted. The training series was led jointly by the superintendent and the president of the State College Area Teachers Association.

Close working relationships. Given the geographic proximity of Penn State and the State College Area School District, a history of positive working relationships has been cultivated between the school district and numerous sectors of the university. An especially close partnership exists between the district and the Department of Educational Administration. The superintendent holds an appointment as adjunct associate professor of educational administration. And, members of the department have worked as consultants to the district administration on numerous management projects. It was natural, therefore, that the Department of Educational Administration would be willing to assess the implications of TQM for the effective administration of public schools.

Positive Reputation. Penn State University enjoys a positive reputation for excellence throughout the state of Pennsylvania. Therefore, as the CTQS project began to take shape, the development team received a cordial and supportive reception from corporate partners and educational administrators alike.

IBM Grant Initiative. Perhaps the single greatest catalyst for the creation of CTQS was the announcement by IBM of its TQM grant initiative for higher education. After deciding to develop a proposal, Penn State created a cross-functional team that included members of the Colleges of Business, Education, and Engineering. A unique feature of the Penn State proposal was the development of special working relationships with its "suppliers," K-12 school systems.

Within the context of this project, the decision was made to move ahead aggressively with the creation of the Center for Total Quality Schools in the spring of 1992. With funding and/or in-kind support from The Total Quality Council of Central Pennsylvania, IBM, Supelco/Rohm and Haas, Hershey Foods, the Pennsylvania League of Urban Schools, the Harrisburg-based Council for Public Education, the Philadelphia Area Council for Excellence, and Penn State's Continuing Education division, an initial two-day introductory conference on TQM in education was held in State College.

In the fall of 1992, IBM announced that Penn State had been selected from among over 200 applicants as one of eight recipients of the IBM grant. The distinguishing feature of the proposal was the inclusion of K-12 education as the "supplier" of higher education.

Taken together, these elements provided the foundation on which the Center for Total Quality Schools was built.

The initial activity of the CTQS was the Leadership Training Program offered during the 1992-93 academic year. Participants included teams from 15 school districts and intermediate units. The typical team of trainees included the superintendent or assistant superintendent, the president of the teachers' association, a building principal, and a classroom teacher. Each month the teams traveled to Penn State's University Park campus for a full day of training in Total Quality Management. The modules in the training series included:

September	Quality: The Challenge of the 1990s
October	Transformational Leadership
November	The Customer-Driven Organization
December	Systems and Variation
January	Continuous Quality Improvement
February	Teams and Teamwork
March	Quality Schools and Classrooms
April	Quality Measurement and Assessment
May	Planning for Quality
June	Partnerships for Quality Improvement

Also, in cooperation with the CTQS, Penn State's Department of Educational Administration conducted a graduate level course entitled "Total Quality Management in Education" during the spring term of 1992-93. The course followed the same basic thematic structure of the Leadership Training Program.

Plans are underway to expand the training efforts of the CTQS in future academic years to include regional TQM training programs. Additionally, the CTQS will provide logistical support

for the school districts and the state's intermediate units (IUs) in the "first wave" of training as they implement TQM principles and practices in their school districts. Another facet of CTQS efforts is a research and publication campaign to document "what works" among the various TQM techniques in the school district setting. Finally, members of the CTQS staff are actively pursuing corporate support to provide a solid foundation for the operations of the center over the next five years.

CONCLUSION

There is litte doubt that in the 1990s that the character of public education for the 21st Century will be forged. While the Quality Movement has gained momentum and has acquired its share of profits, there are many concerns that must be addressed by the educational community if its place in the new order is to be assured.

If "Quality" is to be a major player in the reform movement, its message must be applied throughout the entire educational program. In simple terms, if school governance is not addressed, if curriculum design is ignored, if the instructional process is not redesigned, and if student outcomes are minimized, the impact of the Quality Movement as a driving force for reform will be negated.

As public educators, we cannot afford to continue in the vein of business as usual. We must take bold and dynamic steps to redirect this massive institution called public education. We are convinced that within the parameters of this movement called "Quality" that such new and bold possibilities exist.

ENDNOTE

1. W. Edwards Deming, *Out of the Crisis* (Cambridge, MA: Massachusetts Institute of Technology, n.d.), 23-24.

ABOUT THE AUTHORS

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